

On *Cardium textum* Brönn, 1831 (Bivalvia, Cardiidae)

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Abstract

The species known as *Nemocardium striatum* (Brocchi, 1814) is based on a misidentification. Recently, a replacement name was proposed for it, *Nemocardium italicum* La Perna & D'Abramo, 2011, but the finding of an older valid synonym, *Cardium textum* Brönn, 1831, demands a nomenclatural update. The correct species' name is *Nemocardium textum* (Brönn, 1831).

Key words

Cardiidae, *Nemocardium*, Plio-Pleistocene, Italy, nomenclature.

Riassunto

[Su *Cardium textum* Brönn, 1831 (Bivalvia, Cardiidae)]. La specie nota in letteratura come *Nemocardium striatum* (Brocchi, 1814) è basata su un'erronea identificazione. Recentemente, per questa specie è stato proposto il nome di sostituzione *Nemocardium italicum* La Perna & D'Abramo, 2011. Esiste però un sinonimo valido più antico, *Cardium textum* Brönn, 1831, per cui il nome della specie in esame è *Nemocardium textum* (Brönn, 1831).

Parole chiave

Cardiidae, *Nemocardium*, Plio-Pleistocene, Italia, nomenclatura.

Introduction

According to a recent revision of the genus *Nemocardium* Meek, 1876 from the Pliocene and Pleistocene of Italy, by La Perna & D'Abramo (2011), *Cardium striatum* Brocchi, 1814 has been misidentified in the past and modern literature, as *Nemocardium striatum* (Brocchi, 1814) (Sacco, 1899; Cerulli-Irelli, 1908; Cavallo & Repetto, 1992; Monegatti & Raffi, 2001; Tabanelli, 2008). No material of *C. striatum* is present in the Brocchi's collection, but a critical review of the original description and illustration (Brocchi, 1814: p. 507, pl. 13, fig. 5) provides strong evidence that it is a *Laevicardium* species, most probably a juvenile of *L. crassum* (Gmelin, 1791). The species which has been reported as *Nemocardium striatum* actually belongs to *Nemocardium*, but it was described by Calcara (1841: p. 28, pl. 1, fig. 7) from the Pliocene of Altavilla (Sicily) as *Cardium striolatum*. Due to the pre-occupied status of *C. striolatum* Calcara, 1841 by *C. striolatum* Link, 1807, La Perna & D'Abramo (2011) proposed *Nemocardium italicum* as a replacement name. Further literature searches allowed an older, valid synonym to be brought to light, *Cardium textum* Brönn, 1831, as discussed in the present work.

Results and discussion

Cardium textum was described by Brönn (1831: p. 102; species n. 589) on two specimens from "Cq." and "And.", the former standing for Castell'Arquato, the

latter for Valle Andona, two classical Pliocene localities in Northern Italy. The "blue clays" cropping out in the area of Castell'Arquato and Lugagnano (Piacenza) are of Middle Pliocene age and represent the historical Piacentian stratotype (Rio et al., 1988; Lirer & Iaccarino, 2011). For this locality, Brönn (1831) indicated the stratigraphic level "d" (p. 5: "Jüngerer Grobkalk, gelb, sandig, über vorigem"), probably pointing to the upper part of the Piacentian sequence, consisting of sandy beds (Lirer & Iaccarino, 2011: fig. 39). Material of "*Nemocardium italicum*" from Castell'Arquato was examined and illustrated by La Perna & D'Abramo (2011). Valle Andona is the type locality of the disused Astian stage, whose historical stratotype mainly consists of sandy beds (Lirer & Iaccarino, 2011: fig. 43), Early to Middle Pliocene in age (Sampò et al., 1968).

Brönn described his species as follows: "*C. testa cordiformi inflato-globosa, radiatim striata; striis subtilissimis, numerosissimis, simplicibus: anterioribus texto-undulosis, medianis rectis, posterioribus crassis subtilissime papillosum; interstitiis punctatis, marginibus crenulatis.* Länge und Breite 6''. Streifen des hinteren Drittheils über 30, des mittleren und vorderen gegen 150.".

This description fits well with *Nemocardium italicum*, but a confirmation of the identity of *C. textum* and its conspecificity with *N. italicum* was given by the examination of two valves from the Brönn collection, on high resolution photographs (Fig. 1). The two valves are stored in the Museum of Comparative Zoology, Harvard University, Cambridge, with the catalogue number IPBV-6874 and are labelled "Castell'Arquato". It is not

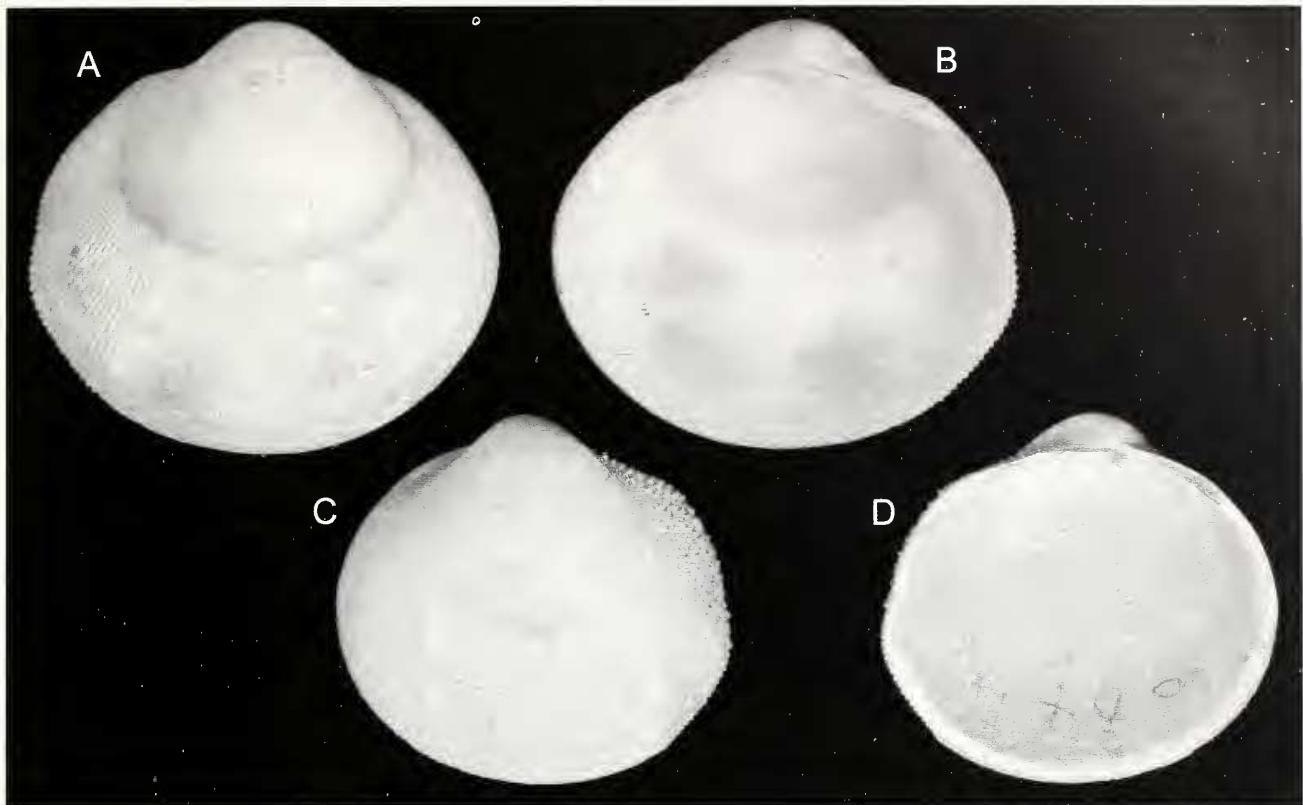


Fig. 1. *Nemocardium textum* (Bronn, 1831). Possible syntypes of *Cardium textum* Bronn, 1831 (Bronn coll., Museum of Comparative Zoology, Harvard University, IPBV-6874). **A.** 11.1 mm (length); **B.** 9.2 mm (length). Courtesy of MCZ.

Fig. 1. *Nemocardium textum* (Bronn, 1831). Possibili sintipi di *Cardium textum* Bronn, 1831 (coll. Bronn, Museum of Comparative Zoology, Harvard University, IPBV-6874). **A.** 11,1 mm (lunghezza); **B.** 9,2 mm (lunghezza). Per gentile concessione MCZ.

known if they actually are syntypes of *Cardium textum*, but it is worth remarking that Castell'Arquato is one of the two localities reported in the original description. *Cardium textum* was discussed by Pantanelli (1893), on Pliocene material from the malacological collections housed in the Museo di Mineralogia e Geologia of the Modena University. He reported and commented the original description, focusing on the sculpture: "...non è esatto che le costicine anteriori sieno ondulose, esse sono rettilinee come in tutti i Cardini, però le papille distanti fra loro dalle quali sono ornate, sono disposte in serie ondulose, mentre nella parte posteriore le costicine più grosse e più marcate son coperte di papille uniformemente avvicinate". Pantanelli remarked that the anterior riblets are not "wavy", as described by Bronn, but regularly straight (i.e. radial), bearing wide spaced, small tubercles which form wavy alignments, whereas the posterior riblets are coarser, with close set, regularly spaced tubercles. As seen in the illustrations reported by La Perna & D'Abra-mo (2011: fig. 4e, f), the anterior granulations are variable in strength, usually well defined, forming discontinuous wavy ridges, obliquely to commarginally arranged.

Strangely, Pantanelli did not recognize the differences between *Cardium striatum* and *C. textum*, though he admitted the poor quality of Brocchi's description and illustration.

We are not aware of other citations of *Cardium textum* in the early literature, apart that by Namias (1898), based

on the malacological collection from Castell'Arquato housed in the University of Modena, i.e. the same material studied by Pantanelli.

"*Cardium textum* Bronn, 1832" (sic) was included in the recent work by Hylleberg (2004: p. 800), with the only remarks "Combination to be revised".

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